

# ACM TRANSACTIONS ON PROGRAMMING LANGUAGES AND SYSTEMS

---

**VOLUME 9 • 1987**

Editor-in-Chief  
Associate Editors

**Susan L. Graham**  
**Frances E. Allen**  
**A. Nico Habermann**  
**Leslie Lamport**  
**Barbara H. Liskov**

**William E. Riddle**  
**Thomas G. Szymanski**  
**William A. Wulf**

Published by the Association for Computing Machinery

Copyright © 1987, Association for Computing Machinery, Inc.  
11 West 42 Street, New York, NY 10036

---

## **VOLUME 9 • 1987**

Information for Authors	467
<b>R. Allen and K. Kennedy</b> Automatic Translation of FORTRAN Programs to Vector Form	491
<b>E. Anson</b> A Generalized Iterative Construct and Its Semantics	567
<b>D. Banerjee</b> A Methodology for Synthesis of Recursive Functional Programs	441
<b>L. Bic and C. Lee</b> A Data-Driven Model for a Subset of Logic Programming	618
<b>M. Broy, M. Wirsing, and P. Pepper</b> On the Algebraic Definition of Programming Languages	54
<b>M. G. Burke and G. A. Fisher</b> A Practical Method for LR and LL Syntactic Error Diagnosis	164
<b>S. D. Carson and P. F. Reynolds, Jr.</b> The Geometry of Semaphore Programs	25
<b>A. Charlesworth</b> The Multiway Rendezvous	350
<b>J. Cohen and T. J. Hickey</b> Parsing and Compiling Using Prolog	125

# ACM TRANSACTIONS ON PROGRAMMING LANGUAGES AND SYSTEMS

---

**VOLUME 9 • 1987**

Editor-in-Chief  
Associate Editors

**Susan L. Graham**  
**Frances E. Allen**  
**A. Nico Habermann**  
**Leslie Lamport**  
**Barbara H. Liskov**

**William E. Riddle**  
**Thomas G. Szymanski**  
**William A. Wulf**

Published by the Association for Computing Machinery

Copyright © 1987, Association for Computing Machinery, Inc.  
11 West 42 Street, New York, NY 10036

---

## **VOLUME 9 • 1987**

Information for Authors	467
<b>R. Allen and K. Kennedy</b> Automatic Translation of FORTRAN Programs to Vector Form	491
<b>E. Anson</b> A Generalized Iterative Construct and Its Semantics	567
<b>D. Banerjee</b> A Methodology for Synthesis of Recursive Functional Programs	441
<b>L. Bic and C. Lee</b> A Data-Driven Model for a Subset of Logic Programming	618
<b>M. Broy, M. Wirsing, and P. Pepper</b> On the Algebraic Definition of Programming Languages	54
<b>M. G. Burke and G. A. Fisher</b> A Practical Method for LR and LL Syntactic Error Diagnosis	164
<b>S. D. Carson and P. F. Reynolds, Jr.</b> The Geometry of Semaphore Programs	25
<b>A. Charlesworth</b> The Multiway Rendezvous	350
<b>J. Cohen and T. J. Hickey</b> Parsing and Compiling Using Prolog	125

<b>J. E. Cuny and L. Snyder</b> Conversion from Data-Driven to Synchronous Execution in Loop Programs	<b>599</b>
<b>M. S. Feather</b> Language Support for the Specification and Development of Composite Systems	<b>198</b>
<b>J. Ferrante, K. J. Ottenstein, and J. D. Warren</b> The Program Dependence Graph and Its Use in Optimization	<b>319</b>
<b>R. Finkel and U. Manber</b> DIB—A Distributed Implementation of Backtracking	<b>235</b>
<b>C. W. Fraser and E. W. Myers</b> An Editor for Revision Control	<b>277</b>
<b>C. T. Haynes and D. P. Friedman</b> Embedding Continuators in Procedural Objects	<b>582</b>
<b>R. C. Holt</b> Data Descriptors: A Compile-Time Model of Data and Addressing	<b>367</b>
<b>F. T. Krogh</b> ACM Algorithms Policy	<b>463</b>
<b>D. A. Lamb</b> IDL: Sharing Intermediate Representations	<b>297</b>
<b>J. Loeckx</b> Algorithmic Specifications: A Constructive Specification Method for Abstract Data Types	<b>646</b>
<b>R. A. Mueller and J. Varghese</b> Retargetable Microcode Synthesis	<b>257</b>
<b>T. Reps and A. Demers</b> Sublinear-Space Evaluation Algorithms for Attribute Grammars	<b>408</b>
<b>D. J. Rosenkrantz and H. B. Hunt</b> Efficient Algorithms for Automatic Construction and Compactification of Parsing Grammars	<b>543</b>
<b>S. Sokolowski</b> Soundness of Hoare's Logic: An Automated Proof Using LCF	<b>100</b>
<b>M. Sonnenschein</b> Graph Translation Schemes to Generate Compiler Parts	<b>473</b>
<b>J. M. Wing</b> Writing Larch Interface Language Specifications	<b>1</b>
<b>S. Yemini and D. M. Berry</b> An Axiomatic Treatment of Exception Handling in an Expression-Oriented Language	<b>390</b>